direction of incidence of the light beam, and from which other Bragg grating the light beam emerges substantially along the direction of incidence.

2(amended). The transmission component as claimed in claim 1, wherein the Bragg gratings are contradirectionally mode-coupling fiber Bragg gratings, provided in a glass fiber optical waveguide.

3(amended). The transmission component as claimed in claim 1, wherein all the Bragg gratings are chirped.

4(amended). The transmission component as claimed in claim 3, wherein the two gratings in each said pair have different grating constant ranges and opposite chirp.

5(amended). The transmission component as claimed in claim 1, wherein the two pairs of Bragg gratings are arranged in order as a first through a fourth grating, wherein in an operational wavelength band, the second grating in the first pair first mode-couples the fundamental mode, which is fed in on an input side, contradirectionally into an intermediate mode,

wherein the first grating mode-couples the intermediate mode contradirectionally, that is to say in the forward direction once again, into a third mode,

wherein the fourth grating mode-couples the third mode contradirectionally into the intermediate mode once again, and

wherein the third grating mode-couples the intermediate mode contradirectionally, that is to say once again in the forward direction, into the fundamental mode which, after passing through the fourth grating, emerges on an output side with dispersion applied to it by virtue of chirp of the chirped gratings.

6(amended). The transmission component as claimed in claim 1, wherein a parabolic refractive index profile is provided in a core of the glass fiber optical waveguide, in order to produce the Bragg gratings.

7(amended). The transmission component as claimed in claim 6, wherein the glass fiber optical waveguide is doped with at least one of GeO_2, F- and Be_2O_3 in order to produce the refractive index profile.

8(amended). The transmission component as claimed in claim 1, wherein the glass fibers have approximately the same mode field radius as the fibers that are to be connected.

9(amended). The transmission component as claimed in claim 1, wherein rotationally symmetrical modes LP_{01}, LP_{02}, and LP_{03} are carried by the component.

10(amended). The transmission component as claimed in claim 9, wherein non-rotationally symmetrically carried modes are also carried by the component, and wherein the Bragg gratings are arranged obliquely rather than at right angles with respect to a fiber axis of the glass fiber optical waveguide.

11(amended). The transmission component as claimed in claim 1, wherein a cladding mode is also used in addition to two modes which are carried by the glass fiber optical waveguide.

12(amended). The transmission component as claimed in claim 1, wherein the gratings are chirped linearly for first-order dispersion compensation.

13(amended). The transmission component as claimed in claim 1, further comprising means for applying to the glass fiber optical waveguide at least one of defined mechanical forces and temperature stabilization at a suitable value within a specific temperature range, in order to set a propagation time difference between extreme values for wavelengths that are used.

14(amended). A transmission component as claimed in claim 1, wherein at least two said components are connected in series.

Claim 15 has been canceled, without prejudice.

16(new). The transmission component as claimed in claim 1, wherein the light beam emerges in a direction that is one of in the direction of incidence, and substantially parallel to the direction of incidence.

17(new). The transmission component as claimed in claim 2, characterized in that all the Bragg gratings are chirped.

18(new). The transmission component as claimed in claim 2, characterized in that the two gratings in each pair have different grating constant ranges and opposite chirp.

19(new). The transmission component as claimed in claim 3, characterized in that the two gratings in each pair have different grating constant ranges and opposite chirp.

20(new). The transmission component as claimed in claim 1, wherein the gratings are chirped non-linearly for high-order dispersion compensation of one or more of the gratings.

21(new). A method for producing normal and anormal chromatic dispersion which can be predetermined, comprising:

applying an incident light beam in a forward direction onto a glass fiber optical waveguide structured to carry not only a fundamental mode but also at least one other mode, and at least two pairs of Bragg gratings, of which at least one pair has chirped Bragg gratings, and,

causing a first Bragg grating in each said pair to reflect an arriving light beam back to an other Bragg grating in said pair, in a direction approximately opposite the

forward direction, and from which other Bragg grating the light beam emerges substantially along the direction of incidence.

22(new). The method as claimed in claim 21, comprising providing two said gratings in each said pair with different grating constant ranges and opposite chirp.

23(new). The method as claimed in claim 21, comprising arranging the two pairs of Bragg gratings in order as a first through a fourth grating, wherein in an operational wavelength band, the second grating in the first pair first mode-couples the fundamental mode, which is fed in on an input side, contradirectionally into an intermediate mode,

wherein the first grating mode-couples the intermediate mode contradirectionally, that is to say in the forward direction once again, into a third mode,

wherein the fourth grating mode-couples the third mode contradirectionally into the intermediate mode once again, and

wherein the third grating mode-couples the intermediate mode contradirectionally, that is to say once again in the forward direction, into the fundamental mode which, after passing through the fourth grating, emerges on an output side with dispersion applied to it by virtue of chirp of the chirped gratings.